NOTE

This Microfiche meets the quality requirements of the American National Standard for Microfiche of Documents (ANSI PH5.9-1975). However, because of imperfections in the document from which it was made, it contains images that are illegible or difficult to read. The source document for this microfiche is the best copy that could be obtained prior to filming.

CIS Congressional Information Service, Washington, D.C.

IMPLEMENTATION OF THE HELSINKI ACCORDS

HEARING

BEFORE THE

COMMISSION ON SECURITY AND COOPERATION IN EUROPE

ONE HUNDREDTH CONGRESS

SECOND SESSION

POLITICS OF POLLUTION IN THE SOVIET UNION AND EASTERN EUROPE (ON THE SECOND ANNIVERSARY OF THE CHERNOBYL DISASTER)

PART II

APRIL 26, 1988

Printed for the use of the
Commission on Security and Cooperation in Europe

[CSCE 100-2-34]

U.S. GOVERNMENT PRINTING OFFICE

87-950 WASHINGTON : 1988

For sale by the Superintendent of Documents, Congressional Sales Office
U.S. Government Printing Office, Washington, DC 20402

J891-13

COMMISSION ON SECURITY AND COOPERATION IN EUROPE

STENY H. HOYER, Maryland, *Chairman*
DENNIS DECONCINI, Arizona, *Co-Chairman*

DANTE B. FASCELL, Florida
EDWARD J. MARKEY, Massachusetts
BILL RICHARDSON, New Mexico
EDWARD F. FEIGHAN, Ohio
DON RITTER, Pennsylvania
CHRISTOPHER H. SMITH, New Jersey
JACK F. KEMP, New York
JOHN EDWARD PORTER, Illinois
FRANK LAUTENBERG, New Jersey
TIMOTHY WIRTH, Colorado
WYCHE FOWLER, Georgia
HARRY REID, Nevada
ALFONSE M. D'AMATO, New York
JOHN HEINZ, Pennsylvania
JAMES McCLURE, Idaho
MALCOLM WALLOP, Wyoming

EXECUTIVE BRANCH

HON. RICHARD SCHIFTER, Department of State
Vacancy, Department of Defense
Vacancy, Department of Commerce

SAMUEL G. WISE, *Staff Director*
MARY SUE HAFNER, *Deputy Staff Director and General Counsel*
JANE S. FISHER, *Senior Staff Consultant*
MIKE AMITAY, *Staff Assistant*
CATHERINE COSMAN, *Staff Assistant*
OREST DEYCHAKIWSKY, *Staff Assistant*
JOSH DOROSIN, *Staff Assistant*
JOHN FINERTY, *Staff Assistant*
ROBERT HAND, *Staff Assistant*
GINA M. HARNER, *Administrative Assistant*
JUDY INGRAM, *Staff Assistant*
JESSE JACOBS, *Staff Assistant*
JUDI KERNS, *Office Manager*
RONALD MCNAMARA, *Staff Assistant*
MIKE OCHS, *Staff Assistant*
SPENCER OLIVER, *Consultant*
ERIKA SCHLAGER, *Staff Assistant*
THOMAS WARNER, *Printing Clerk*

CONTENTS

APRIL 26, 1988

WITNESSES

Prepared statements of:

	Page
Appendix E—John M. Kramer	37
Appendix F—Charles E. Ziegler	50
Appendix G—Barbara Jancar	79

APPENDIX E

"Chernobyl' and the Nuclear 'Debate' in Communist Europe:

The Role of Public Opinion"

Testimony Prepared for the United States Congress Commission

on Cooperation and Security in Europe

April 25, 1988

John M. Kramer
Department of Political Science
Mary Washington College
Fredericksburg, VA

The explosion at the Chernobyl' Nuclear Power Station on April 26, 1986 contaminated large areas of the environment with radioactive wastes in both Communist Europe* and Western Europe. In Communist Europe, Chernobyl' also precipitated highly visible protests against the development of nuclear power in the region and the overall reticence of Communist governments to provide full and prompt information about the accident and its consequences for the environment and health of the people.

The emergence of a discernible antinuclear "lobby" is of preeminent significance in Communist Europe where regimes typically have been intolerant of any manifestations (however incipient) of political pluralism and dissent. Indeed, critics charge that nondemocratic political practices are themselves factors that compromise nuclear safety and increase the risks of another Chernobyl'. As a member of the Polish Academy of Sciences has forcefully argued, the "great weakness" of nuclear safety measures in Poland "is rooted in the extensive and long-standing practice of concealing and falsifying breakdowns and accidents as well as their circumstances and results." He continues:

> No public analyses, investigations, and trials take place, and no real causes and truly guilty people are disclosed. The situation is made worse by the ineffective and deceptive system of information and public warnings, a thing that has often created great trouble.[1]

Popular Opposition

Not surprisingly, the most widespread protests against nuclear power in Eastern Europe occurred in Poland -- which suffered the highest levels of radioactive contamination among East European states, and where anti-Soviet sentiments are particularly strong. More than 2,000 people in Krakow, organized by the dissident pacifist group "Freedom and Peace," marched to the

old royal castle carrying placards and chanting antinuclear slogans including "No Iodine from the U.S.S.R.," "Thou Shalt Not Kill," and (in reference to Poland's first nuclear power plant now under construction at Zarnowiec), "Today Chernobyl', Tomorrow Zarnowiec."[2] Five Polish nuclear power experts published an open letter urging the government to reassess the safety features at Zarnowiec, which, they claimed, had "raised doubts" among the population because many features of the plant were based upon untested Soviet prototypes.[3] Another critic asked how Poland could expect to build and run a technologically sophisticated facility like Zarnowiec when it has "technological problems in manufacturing toilet paper, not to mention the production of an average grade of automobile."[4] The Zarnowiec project also elicited a petition from some 3,000 residents of Bialystok in northern Poland (one of the areas seriously polluted by the emissions from Chernobyl') demanding a halt in construction at Zarnowiec until the entire project could be placed under the supervision of the International Atomic Energy Agency and assurances provided that the plant would use only the "most sophisticated" safety systems. The petition further asserted that official assurances about the safety of nuclear power were "not credible."[5]

In the German Democratic Republic (GDR), hundreds of people -- doubtless well informed about the Chernobyl' events by West German television -- submitted to the government on Environment Day a petition entitled "Chernobyl' Is Everywhere," asserting that Chernobyl' had caused "insecurity and a feeling of being threatened." The petition condemned the government's alleged reluctance to discuss openly the magnitude and consequences of the accident as "irresponsible and socially dangerous," and urged the authorities through a referendum (constitutionally permitted, though never before

employed) to initiate a "broad public discussion" about the future of nuclear power and, specifically, whether the GDR should completely abandon it by 1990.[6] Members of the Evangelical Church in East Germany, long active on issues such as environmental protection, also addressed these problems. In one instance, a peace group composed of church members sent a letter of protest to the GDR Council of Ministers that dismissed as "erroneous" official claims about the safety of Soviet-designed reactors and demanded that all reactors be shut down immediately and research be begun on alternative sources of energy.[7] The subject figured "prominently" in the deliberations of the May 1986 synod of the church's leadership conference. One participant remarked that the "crust of taboos" surrounding public discussion of this hitherto unmentionable subject had been broken and a "nuclear debate" had ensued among the people. The hierarchy of the church was more circumspect. Although it acknowledged that Chernobyl' had raised difficult questions about whether nuclear power was "socially responsible," it predicted that the GDR "would probably have to live with nuclear energy for some time."[8]

In Czechoslovakia, a Western source reported "marked fear" and "panic" after Chernobyl' among citizens residing near Czechoslovakia's two nuclear power plants (located at Jaslovske Bohunice and Dukovany, respectively).[9] Rude pravo, the official organ of the Czechoslovak Communist Party, implicitly confirmed this account when it reported that after Chernobyl' "many people" in Czechoslovakia asked whether the development of nuclear power "cannot be slowed down or even stopped."[10] A new dissident group "Antiatom" has emerged with the self proclaimed goal "to stop the atomic threat" in Czechoslovakia.[11] It has distributed postcards with a picture of

the Temelin Nuclear Power Station currently under construction and warning about the costs and dangers (including the potential for diversion of fissionable materials to build nuclear weapons) of the Czechoslovak nuclear power industry. The prominent dissident group Charter 77 has also criticized the Temelin project. The Charter points out that the site chosen for the project is in a region with high seismic instability and contiguous to several urban agglomerations with hundreds of thousands of inhabitants. It also questions the safeguards against seismic movements of the Soviet designed reactors that will be used at Temelin.[12]

Public protests against nuclear power in Yugoslavia even predated Chernobyl'. Thus, in early April 1986, over 70,000 individuals signed a petition protesting the development of nuclear power in Yugoslavia -- by far the largest protest of its kind in Communist Europe.[13] Shortly after Chernobyl', the Center for Marketing Research in Zagreb polled 2,000 adults in which 80 per cent of the sample responded negatively to the question "Do you think nuclear power plants should be built in Yugoslavia?" The official Yugoslav news agency considers these data to "genuinely reflect" public opinion about nuclear power.[14] Young people have been especially active in antinuclear protests. For example, delegates at the 1987 national conference of the Union of Socialist Youth in Yugoslavia urged a moratorium on the development of nuclear power until a national debate and referendum on the subject takes place. The delegates labeled it "impermissible" that the government routinely withholds information from the public about the nuclear program and lets a small group of experts determine nuclear policy.[15]

Chernobyl' even has stimulated public opposition to nuclear power in the Soviet Union. This is especially true in the Ukrainian SSR where the

Chernobyl' plant is located. There, a "joint lobby," as a Western source characterizes it,[16] of prominent Ukrainian scientists and literary figures has lobbied vigorously to halt, or at least slow down, the ambitious program to develop nuclear power in the republic. (At present, five nuclear power stations, accounting for 40 per cent of installed nuclear capacity in the USSR, operate in the republic, and four more stations currently are under construction.) Undoubtedly, Communist Party leader Mikhail Gorbachev's stress on glasnost' ("openness") in public discussion has facilitated the efforts of the antinuclear "lobby."

Literaturna Ukraina recently (January 21, 1988) published a letter from 13 leading Ukrainian scientists that embodies many of the arguments of the opponents of nuclear power. The scientists chastise the USSR Ministry of Atomic Energy for a "belligerent and bureaucratic" attitude that seeks only to expand the production of nuclear power, that ignores the "bitter lessons of Chernobyl'," that is indifferent to the valid concerns of the public regarding the safety and impact on the environment of nuclear power stations, and that typically locates these stations in densely populated urban areas.

Many ordinary citizens have also expressed their concern with nuclear power. Reportedly, since Chernobyl' doctors in some areas spend "most of their working time" in "combating radiation phobia" among citizens fearful of contamination from nearby nuclear plants.[17] A letter to the editor in Izvestiia (March 9, 1988) asserted that "it is necessary in cities located in the vicinity of nuclear power stations to install instruments in public places which would show the level of radiation, and it ought to be possible to buy personal counters in stores." Other readers of Izvestiia raise what

the newspaper itself labels the "difficult and very acute" question of the location of nuclear power stations contiguous to, or even within, conurbations. These readers, Izvestiia reports, say "that the public is indignant; it protests, but no one takes any notice. Power engineers are building nuclear installations wherever it suits them."[18] Other citizens -- particularly religious believers -- view Chernobyl' (which means "wormwood") as a harbinger of apocalypse. They note that in the Revelation of St. John the Divine (8:10-11) a great star fell from heaven upon the waters of the earth:

> and the name of the star is Wormwood: and the third part of the waters became wormwood; and many people died of the waters, because they were made bitter.

The Official Response

Undoubtedly, antinuclear protesters face formidable — if not insurmountable -- obstacles in achieving their goal of the complete abandonment of nuclear power. First, they operate in nondemocratic political systems that have the capacity to limit sharply their activities. Second, all regimes in the region have devoted so many resources to the development of nuclear power that they are unlikely (except perhaps in Poland) totally to abandon these efforts.[19] Third, just as in democratic societies, there are in Communist Europe many ardent proponents of nuclear power who sincerely believe that the benefits to be derived from the atom far outweigh the risks. In particular, proponents see nuclear power as a welcome alternative in primary energy consumption to the present heavy reliance upon brown coal and lignite that has so devastated the environment in the region.[20] This argument may explain why many East European environmentalists, notably in

Hungary, voice little opposition to nuclear power.

In general, communist governments, while acknowledging the seriousness of the accident at Chernobyl' and the need to draw appropriate lessons from it, reaffirm their commitment to nuclear power. A Polish source, reflecting prevailing official sentiment, remarked that Chernobyl' represents "a lesson, not a verdict." A Czech source even asserted shortly after the accident that scientific progress necessarily involves setbacks, including "the loss of life...Mankind has to pay for every advance and this also applies to the field of nuclear power."[21] These sentiments were reflected in the nuclear power plans announced at the 1986 meeting of the Council for Mutual Economic Assistance. There, Nikolai Ryzhkov, chairman of the USSR Council of Ministers, announced that, by the year 2000, East European states (excluding Yugoslavia) would expand their installed nuclear capacity to 50 million kilowatts, versus approximately 8 million kilowatts of installed capacity in 1986. He also maintained that nuclear power would generate between 30 and 40 per cent of the electricity then being produced.[22]

Despite such assertions, there is evidence that Chernobyl' and popular opposition to nuclear power have fostered, or reinforced, reservations about nuclear power among political elites throughout Communist Europe -- although their precise impact on elites remains unclear given the secrecy (even in the era of glasnost') still surrounding decision making processes in communist polities.

These reservations are most obvious in Yugoslavia. Authorities there have declared a "moratorium" until the year 2000 on building four previously planned nuclear plants.[23] In Poland, authorities have halted construction work "for several months" at the Zarnowiec nuclear plant, reportedly because

Polish nuclear experts have become "very meticulous" about safety since Chernobyl' and fear that it is being compromised at Zarnowiec.[24] Soviet sources report -- although it cannot be verified -- that public opinion played an important role in the decision to suspend construction at several nuclear power stations.[25]

More broadly, all regimes in Communist Europe have affirmed an enhanced commitment to the safe operation of nuclear facilities. The USSR is spending as much as $5,000,000 for additional safety systems on every reactor it has in operation. Henceforth the USSR also will equip all reactors with steel containment vessels to control meltdowns. Previously the USSR had argued that the reliability of its nuclear technology made such vessels (long standard features on Western reactors) superfluous. Several Soviet scientists even once contended that containment vessels and other safety features common in the West were merely "placebos to placate the people" under capitalism, made necessary by "negative dramatizations" in the press.[26] Perhaps most significantly, the USSR has announced that all new power blocks will be equipped with pressurized water reactors rather than graphite moderated reactors of the type installed at Chernobyl'. Water pressurized reactors already are standard throughout Eastern Europe.

East European states have taken similar measures. Both Czechoslovakia and the G.D.R. have announced that their new nuclear plants, at Temelin and Stendal respectively, will be protected by containment vessels -- the first such structures to be installed in these countries.[27] Reportedly, in Bulgaria "security systems" at the Kozloduy Nuclear Power Station "have been tripled" since the accident at Chernobyl'. Bulgarian officials stress that expansion of the Kozloduy plant is proceeding "in cooperation with

specialists of the International Atomic Energy Agency" and international standards are being "fully met" therein.[28] Finally, Bulgaria, Czechoslovakia, Hungary, and the USSR have all invited teams from the International Atomic Energy Agency to inspect selected nuclear facilities and ensure their adherence to international standards of safety.

Whither Nuclear Power?

It was not long ago that nuclear power was considered an inexpensive, safe, and environmentally sound answer to the world's energy needs. Today, it is more often associated with soaring costs, interminable delays in construction of new plants, apprehensions about the reliable and safe operation of existing plants, and fear that governments might utilize the nuclear energy industry to acquire, and even use, nuclear weapons.

The accident at the Chernobyl' Nuclear Power Station enormously magnified these reservations about nuclear power both within and without Communist Europe. In the polities of Communist Europe, Chernobyl' stimulated a "debate" among proponents and opponents about the future status of nuclear power in the region. The "debate" — itself a highly unusual, if not unique, phenomenon in communist polities where regimes typically tolerate little public opposition to official policy -- has involved as participants both official elites and the citizenry at large.

Our analysis suggests that popular antinuclear sentiment has exerted some influence on public policy. Regimes have sought to assuage popular fears about the dangers of nuclear power by assuring their populations that they have enhanced safety measures to insure that nuclear accidents cannot happen in their country. Public opinion seemingly also has influenced the

decision in Poland to halt construction temporarily at the Zarnowiec Nuclear Power Station and in Yugoslavia to declare a "moratorium" on the construction of new nuclear facilities.

On the other hand, nuclear power will continue to be an important, albeit not the decisive, component of the energy balance in Communist Europe for the foreseeable future. Ironically, even after Chernobyl' -- and the extensive contamination of the environment that ensued -- concern for environmental quality may remain one of the strongest rationales for nuclear power in the region. To be sure, nuclear power is not without adverse consequences for the environment. Yet it is equally true that most forms of energy production entail some pollution of the environment, and that those based on brown coal and lignite -- so widely used in Communist Europe -- are especially harmful. On balance, then, while nuclear power may not be a miraculous cure for environmental degradation in Communist Europe, it may, nevertheless, prove more "friendly" (as a proponent of nuclear power once phrased it) to the environment than any other readily available source of energy in the region.

Endnotes

* As used herein, "Communist Europe" refers to Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, the Soviet Union, and Yugoslavia. "Eastern Europe" refers to all of these countries exclusive of the Soviet Union.

1. Tygodnik Powszechny (Krakow), July 27, 1986.

2. Deutsche Presse Agentur (Hamburg), June 1, 1986.

3. Ibid., May 16, 1986.

4. Gwiazda Morza (Gdansk), September 20, 1987.

5. See cite from fn. 2.

6. The text of the petition is published in Across Frontiers (Berkeley, CA), Fall, 1986, 10.

7. Die Tageszeitung (West Berlin), May 17, 1986 reproduces the text of the letter of protest sent to the Council of Ministers.

8. Ibid.

9. Luxemburger Wort (Luxembourg), May 12, 1986.

10. Rude Pravo (Prague), July 28, 1986.

11. Kurier (Vienna), May 9, 1986.

12. Die Presse (Vienna), June 6-8, 1987 provides details of the Charter document.

13. As noted in Helsinki Watch Report, From Below: Independent Peace and Environmental Movements in Eastern Europe and the USSR (New York, 1987), 188.

14. Tanjug (Belgrade), May 19, 1987.

15. Ibid., April 22, 1987.

16. Radio Liberty (Munich), Supplement no. 1, February 24, 1988, 9. The following discussion of antinuclear sentiments in the USSR, unless otherwise noted, is drawn principally from this source.

17. Izvestiia (Moscow), February 10, 1988.

18. Ibid., March 9, 1988.

19. For an extensive discussion of these efforts, see John M. Kramer, "Chernobyl' and Eastern Europe," Problems of Communism (Washington, DC), November-December, 1986, 39-58.

20. See John M. Kramer, "Energy and the Environment," in Joan De Bardeleben, ed., Environmental Policies and Problems in Eastern Europe (McGill University Press, forthcoming). For an overview of environmental degradation in Eastern Europe, see John M. Kramer, "The Environmental Crisis in Eastern Europe," Slavic Review (Urbana, IL), No. 2, 1983, 204-221.

21. Quoted in, respectively, Informationen (Copenhagen), June 11, 1986; Frankfurter Allgemeine Zeitung (Frankfurt), June 23, 1986.

22. Pravda (Moscow), November 4, 1986.

23. As one Western source has argued, "Belgrade is reacting to the mounting resistance against nuclear power which — after the nuclear disaster at the Soviet Chernobyl' plant — has acquired a dimension in Yugoslavia that cannot simply be ignored." Vienna Domestic Service (Vienna), July 28, 1986.

24. Zycie Warszawy (Warsaw), September 5, 1986. Another source reports that the issue of Zarnowiec is "delicate because, following the Chernobyl' tragedy, specialists are inclined to be overcautious, even though in such cases you can never be too careful." Glos Wybrzeza (Gdansk), September 1, 1986.

25. Tass (Moscow), February 15, 1988; Izvestiia, March 9, 1988.

26. As quoted in The New York Times, January 2, 1980.

27. Kramer, "Chernobyl' and Eastern Europe," 43, 51.

28. Bulgarska telegrafna agentiia (Sofia), August 7, 1987.

87-950 O - 88 - 2

APPENDIX F

SOVIET ENVIRONMENTAL PROTECTION UNDER GORBACHEV

Charles E. Ziegler
Department of Political Science
University of Louisville
Louisville, Kentucky 40292

Introduction

Environmental protection efforts in the USSR have been affected by those reforms implemented in the three years since Mikhail Gorbachev came to power. Likewise, recent changes in the debate over environmental issues and in the scope of environmental activities illustrate trends in public opinion and political participation now taking place in the Soviet Union.

The Soviet system is currently experiencing a highly publicized economic restructuring, or perestroika, promoted by General Secretary Gorbachev. These reforms include some weakening of the central planning structure, limited free enterprise (subject to strict licensing provisions), somewhat greater reliance on market mechanisms to distribute goods, and the easing of foreign trade restrictions. The intent is to raise productivity, eliminate much of the waste so endemic to the Soviet centrally planned economy, and improve the supply of consumer goods available to a more demanding population. In conjunction with economic reform, Gorbachev is also pressing for greater openness (glasnost') in public discussion of a wide range of social, economic and political difficulties. Glasnost', by encouraging freer debate within the scientific and political establishment, and generating more feedback from the general public, seeks more effective solutions to problems that Brezhnev and his colleagues either ignored or acknowledged only reluctantly.

Environmental protection is one policy area that received a good deal of scientific and media attention during the Brezhnev period. Publicized discussion of even this seemingly innocuous issue, however, was highly circumscribed under Brezhnev. Party and governmental response to environmental problems was halfhearted and sporadic. Gorbachev's initiatives have changed the contours of debate and activity in environmental protection. Furthermore, there is a greater willingness at the Party and government levels to take more decisive measures in addressing ecological problems. This paper examines recent developments in Soviet environmental protection with reference to the current climate of economic reform and greater openness.

The Environmental Record

The beginnings of Soviet environmental consciousness, in the modern sense of the word, date to the heated discussion over Lake Baikal in the mid-1960s. Since then, the most innovative and influential arguments for environmental protection have been voiced by social and natural scientists, most notably economists. The effective environmental measures enacted over the last two decades have been motivated largely by a recognition of the economic costs of pollution, rather than for esthetic, biological, or health-related reasons.[1] Furthermore, the theoretical challenge of explaining why environmental degradation exists in socialist systems has forced a reevaluation of certain fundamental Marxian economic principles.[2]

A uniquely Soviet form of environmentalism developed in the 1960s and 1970s. In the absence of the green parties or environmental interest groups common to Western Europe and the United States, ecologically-minded individuals had few avenues through which they could express their opinions. Scientists and other experts could publish articles in the mass media and in professional journals criticizing lax bureaucratic implementation of Party and government directives. Battles were waged between agencies charged with exploiting natural resources, and those responsible for protecting the environment.. Average citizens could write letters to Pravda, Izvestiia or other newspapers, join the mass-membership nature preservation societies organized in each republic, or express concern to their (largely powerless) elected representatives in the local soviets. The secrecy surrounding environmental conditions and important government projects, when combined with the production imperative of the Stalinist centrally planned economy, severely disadvantaged would-be defenders of the natural environment.

In the brief period since Gorbachev was appointed General Secretary, the contours of Soviet environmental debate have shifted markedly. First, the Party leadership has demonstrated a much more critical attitude toward expensive and environmentally questionable projects, such as the Siberian river diversion scheme. Second, there appears to be a greater awareness of the real economic costs for the national economy that result from waste of natural resources, and from the spinoff costs of pollution (health care expenditures, the replacement costs of

capital equipment damaged from excessive particulates, accelerated decomposition of buildings, and so forth). Third, there is a greater willingness to acknowledge environmental disasters, and to reduce secrecy overall. Fourth, Gorbachev himself has emphasized environmental protection as one area of common interest that could draw nations together in a new international order. Fifth, as part of the general liberalization occurring in the Soviet Union, a number of miniscule, but vocal, environmental organizations have formed and are operating largely free from Communist Party control. Finally, the environmental debate within the USSR has increasingly been couched in nationalistic terms, both by the slim Russian majority and by several Soviet ethnic minorities.

The following sections examine developments in Soviet ecological questions since Gorbachev came to power. Four highly visible issues are briefly discussed: the proposed projects to reroute Siberian river water southward to irrigate Central Asian agriculture; the renewed attention being devoted to protecting Lake Baikal from pollution; the attempt to halt the decline of the Caspian Sea by damming off the adjoining Kara Bogaz gulf; and the issue of water quality near Leningrad, focusing on the pollution of Lake Ladoga. After years of complaining by environmentalists, the government is now trying to consolidate the fragmented administration of environmental protection. There is increased attention to the use of economic levers under conditions of perestroika. Finally, the glasnost' campaign has significantly affected the scope and form of public participation in environmental questions.

The River Diversion Project

The series of projects that would have diverted water southward to European Russia and Central Asia from the northward-flowing Siberian rivers was first advanced in the late 1940s, under the Great Stalin Plan for the Transformation of Nature. However, serious preparatory work was not initiated until the 1970s, under Brezhnev.

The most contentious plan involved channeling some 2400 kilometers of canals southward from the Ob' and Irtysh rivers into Central Asia, primarily Uzbekistan, and southward to the Volga Basin.[3] This proposal was intensely debated during the first half of the 1980s. Party and government officials in the five Central Asian republics, some members of the Central Asian intellectual community, and scientists involved in the project (including members of the USSR Academy of Sciences' Institute of Water Problems), were adamantly asserted the need for more water to irrigate crops and promote development in the region. The USSR and Russian republic Ministries of Land Reclamation and Water Resources had invested massive sums in preparatory work, and needed continuing investment to pay off their debts to the state. Other proponents of the plan included the All-Union State Design, Surveying and Research Institute on Diversion and Distribution of Northern and Siberian Rivers, certain officials of the USSR State Planning Committee (particularly P.A. Paskar, first vice-chairman of the committee, and V.G. Voropaev, Gosplan's chief expert on

water projects), and V.G. Sokolovskii, first vice-chairman of the State Committee on Hydrometeorology and the Environment.

Critics of the plan were primarily economists, geographers, and writers of the nationalistic, ecology-oriented "village school" of Russian literature. Scientists questioned the climatic effects of diverting large volumes of water southward. Some thought that reducing the volume of water delivered by the northward flowing Ob and Irtysh rivers could possibly shrink the polar ice cap. Scientists also argued that expanding irrigation in Central Asia would increase soil salinity, and predicted that fully half of the water would be lost through evaporation. Notable opponents included A.L. Ianshin, vice president of the USSR Academy of Sciences who headed a commission investigating the methods of the Institute of Water Problems; academicians D.S. Likhachev and G.I. Petrov; and the well-known demographer V. Perevedentsev. Nationalistic writers condemned the flooding of priceless historical monuments (such as Orthodox churches) that would result, and deplored the plunder of the Siberian wilderness. Among those writers most vocal in criticizing the diversion projects are Iurii Bondarev, Sergei Zalygin (editor-in-chief of Novyi mir), Valentin Rasputin, and Evgenii Evtushenko.[4]

In short, those individuals aligned against the project claimed it was neither economically nor ecologically feasible. Forces supporting the diversion accused their opponents of engaging in unscientific tactics reminiscent of T.D. Lysenko and the period of the personality cult.[5] Proponents of the diversion scheme appeared to receive permission to go ahead with the project

shortly after Brezhnev's death in November 1982. The debate continued until Gorbachev's accession to the General Secretaryship, when discussion in the central press virtually ceased. The Central Asian press, however, continued to advocate construction of the canals through early 1986, stressing the contribution that irrigated agriculture would make to the region's economy.

By the time of the 27th CPSU Congress, in February-March 1986, the Party leadership essentially abandoned the scheme. Leonid Vid, deputy chief of Gosplan, announced at the end of the Congress that work on the canals was being suspended. However, several critics charged that the Ministry of Land Reclamation and Water Resources continued work on the project in secret. In August 1986 the Party Central Committee and the Council of Ministers issued a joint resolution that put an end to preparatory and design work on the project. This resolution cited economic and ecological questions as the major reasons for halting the diversion plans.[6] Apparently the Soviet leadership did not feel that the potential benefits for Central Asia outweighed the enormous costs, both economically and in terms of the ecological consequences, to the country as a whole. Instead, the Central Asian republics were instructed to develop a plan to make more efficient use of their existing water resources.[7]

Baikal

Lake Baikal, more than two decades after a contentious

debate on the threat to it posed by construction of two cellulose plants thrust it into world prominence, is once again a subject for discussion. This may be a consequence of Gorbachev's glasnost' policy--articles in the late Brezhnev period generally asserted that Baikal had been saved by the series of measures enacted in the late 1960s and 1970s. Pollution treatment facilities had been installed at the Baikalsk Pulp and Paper combine (the lake's major polluter), nature reserves had been established around the lake, loose floating of timber on tributary rivers had ceased, and construction of the Baikal-Amur Mainline (BAM) across the northern edge of the lake had been rerouted to minimize damage to Baikal. Pollution problems still existed, but were generally discussed in muted tones.[8]

Yet warnings from some of the lake's most ardent defenders suggested that the scope of contamination was much greater than that acknowledged in the Soviet press. Boris Komarov (Zeev Wolfson) in his samizdat tract claimed that a large metallurgical complex related to defense production was being constructed north of Baikal.[9] This plant, scheduled for completion in 1980, has received little attention in the official press. However, Grigorii Galazii, director of the Limnological Institute of the Siberian Academy of Sciences, asserted at a 1982 EKO roundtable discussion that the Baikalsk plant was not the only polluter of the lake. Galazii claimed that nothing was being done to remove mineral substances (as opposed to organic pollutants) from industrial effluents in the region. Galazii's statement was presumably a reference to Ministry of Non-ferrous Metallurgy's

lead and zinc plant located on the Kholodnaia river north of the lake.[10] Additional pollution of the Selenga river and of regional groundwater is expected from the Transbaikal Apatite Plant, now under construction not far from the Selenga.[11]

Baikal's problems have commanded renewed attention in the Soviet media in recent years. Galazii, evaluating the ecological state of Baikal in the late 1970s, claimed that the Selenga River, which provides approximately half of the riparian inflow to Baikal, had become so polluted that its regenerative capacities were exhausted. The Baikalsk and Selenga pulp and paper mills continue to discharge insufficiently treated waste water into the lake, and the Ulan-Ude industrial complex in the Selenga basin contributes additional wastes. Baikal's epishura, the zooplankton critical to purifying the lake's water and central to the food chain, have been decimated by pollution. Finally, Galazii noted a substantial reduction in the size of Baikal's omul (salmon) and seals.[12] Kh. Kh. Trass, an academic at Tartus State University, suggested in 1985 that developers had ignored the long-term ecological consequences of their activities near Baikal. If corrective measures were not taken soon, he asserted, the ecosystem of southern Baikal would be irreversibly altered.[13]

This more critical attitude to Baikal's pollution was reflected in the July 1985 session of the USSR Supreme Soviet devoted to questions of environmental protection. Deputy I.V. Sitnikov, in a speech to the session, noted that despite progress "a real threat to the Baikal area's ecology remains." Timber continues to be floated on the lake in rafts, and harmful

emissions into the atmosphere from the Bratsk and Irkutsk aluminum plants and the Usole and Zima chemical enterprises find their way into Baikal's waters.[14] The writer Valentin Rasputin, in an Izvestiia interview later that year, asked "By what right is our (i.e., Siberians') wealth being squandered?" Rasputin noted that every day the Baikalsk plant alone dumps 250,000 cubic meters of treated and 150,000 cubic meters of partially treated effluent into the lake.[15] Pravda published a critical article in early 1986 (11 January) focusing on the poor performance of the Baikalsk and Selenga combines. Finally, the Party Central Committee responded by holding a meeting on Baikal, on 26th December 1986, at which Politburo member Egor Ligachev, Rasputin, Iurii Izrael (chief of Gidromet), M.I. Busygin (Minister of Timber, Pulp and Paper, and Lumber), N.V. Talyzin (the recently dismissed chief of Gosplan) and other officials discussed measures to be taken to protect Baikal. Various ministries, departments and the USSR Academy of Sciences were criticized for their passive attitudes toward the problem. Gosplan was instructed to complete a draft resolution on Baikal and present it to the Central Committee and Council of Ministers in the near future.[16]

The Communist Party Central Committee and Council of Ministers eventually adopted a decree "On Measures to Ensure the Protection and Rational Utilization of the Natural Resources of the Lake Baikal Basin in 1987-1995." Acting on this mandate, the Ministry of Timber, Pulp and Paper, and Lumber decided to construct a pipeline 70 kilometers long to divert the Baikalsk plant's waste water to the Irkutsk river. The ministry acted

without carrying out the requisite environmental impact studies. Nor did it obtain the necessary construction permits from the local soviets and environmental agencies.[17] Although the Irkutsk does not flow directly into Baikal, it does empty into the Angara river, so effluent diverted by the pipeline will damage another valuable ecosystem. Furthermore, the conduit will not address the severe air pollution, seepage, or accidental overflows from sludge tanks and sedimentation ponds that threaten both the lake and much of the surrounding forest. Scientists are concerned that, should the pipeline rupture, measures to keep the effluent in holding tanks at the Baikalsk combine would substantially raise emissions into the atmosphere. Contamination of the lake, according to the acting director of the Baikal Limnological Institute, covered 23 square miles of Baikal's surface late in 1987.[18]

Approximately 1500 concerned Irkutsk citizens sent Pravda a letter in mid-1987 urging that plans for the pipeline be abandoned.[19] Later that year the Lake Baikal Protection Society organized demonstrations protesting continued pollution of the lake, and sent petitions and letters of complaint to local Party and government officials. The citizens of Irkutsk were particularly incensed that, rather than making progress on converting the Baikalsk combine to a furniture assembly plant, the ministry was intent on pursuing the pipeline solution. Deputies to the local soviets charged the ministry with using pressure tactics to obtain timber cutting permits, and then destroying nearly 300 hectares of forest along the pipeline route. Public opinion, Izvestiia reported in November, finally brought

construction to a halt.[20]

The Kara Bogaz Gulf

In the case of the Kara Bogaz Gol, a large gulf on the eastern shore of the Caspian Sea, a decision was taken to construct a dam in order to prevent the Caspian's water from draining into the Kara Bogaz and evaporating. Scientists were concerned about the substantial, long-term drop in the level of the Caspian. They calculated that the sea had been losing five to six cubic kilometers of water annually to the gulf. By damming off the Kara Bogaz, it was believed, more water from the Caspian's feeder rivers would be available for irrigation, in addition to stemming the alarming decline of the shallow sea. The dam was completed in 1980, but contrary to expectations, the Kara Bogaz completely dried up within three years (rather than 25, as had been predicted). As the inflow of brine from the Caspian ceased, the gulf lost much of its usefulness as a giant evaporation basin. The local industries that collected sodium sulfate, epsom salts, and bischofite (a magnesium chloride) from the gulf's shores were threatened. Ecologists worried that winds would blow remaining salt deposits onto neighboring agricultural lands.

After months of mutual recriminations between the USSR Ministry of Land Reclamation and Water Resources and the Ministry of Chemical Industry about responsibility for the gulf's disappearance, Gosplan ordered the Chief Administration for Hydraulic Engineering Construction (subordinate to the Ministry of

Land Reclamation and Water Resources) to construct a temporary sluice to allow water to flow once again into the gulf. In 1984 a 1.5 meter aqueduct was constructed that channels two cubic kilometers of water per year from the Caspian, an amount deemed sufficient by the Ministry of Land Reclamation to restore the gulf to its previous state. However, the President of the Turkmen Republic Academy of Sciences and Chairman of a Temporary Scientific and Technical Commission on the Kara-Bogaz-Gol, A. Babaev, noted that the gulf was still less than one-third full eighteen months after the sluices were completed. He claimed the flow of water would have to increase by 400 percent to restore the gulf to an acceptable state.[21]

Ironically, Soviet scientists recently discovered that the level of the Caspian had begun to rise on its own accord in 1978, apparently the result of long-term cyclical trends not yet fully understood.[22] This episode has been criticized by specialists and held up in the Soviet press as a prime example of departmentalism, poor planning, and insufficient attention to the ecological consequences of hurried projects within the USSR.[23] Overall, this series of errors cost the Soviet state tens of millions of rubles in lost mineral production, according to Babaev. This does not take into account pollution, soil salinization, and changes in the area's microclimate attributed to the gulf's disappearance. And the director of the Karabogazsulfat Association has expressed fears that his enterprise might not be able to continue operating under existing conditions.[24] The plant is set up to extract minerals from brine, and it would be extraordinarily expensive to

retool in order to utilize dry minerals.[25]

The situation remained deadlocked in early 1988. Neither the Ministry of Land Reclamation and Water Resources nor the Ministry of Chemical Industry would assume responsibility for rectifying the ecological disaster. Salts from the dry lakebed are now polluting the grain-growing region of the Kuban, and despite the intervention of Gorbachev's chief economic advisor, Abel Aganbegian, a solution does not appear likely in the near future.[26]

Leningrad

The pollution of Lake Ladoga, a large body of water to the east of Leningrad, is one of the most recent cases of pollution to attract high-level attention. As is so frequently the case in water pollution, the major culprit appears to the the Ministry of Timber, Pulp and Paper, and Lumber, which operates several mills on Ladoga's banks. Additional pollution comes from animal husbandry complexes located near the lake, and from runoff containing mineral fertilizers. The city of Leningrad and surrounding communities are dumping insufficiently treated sewage into the lake. A system of dikes, complete with a 25 kilometer six-lane highway running along the top, is being constructed across the Gulf of Finland to protect Leningrad from periodic flooding. A complete system for treating industrial and municipal sewage is to be installed together with the dike. There are fears that the dike will affect water quality in the

Neva Bay by inhibiting its natural cleansing ability.

The Council of Ministers of the USSR had passed a resolution of 7 December 1984 "On Additional Measures to Ensure the Protection and Rational Use of Water and Other Resources of the Basin of Lakes Ladoga, Onega and Ilmen," and other resolutions on protecting Ladoga and the Baltic Sea had been enacted prior to this, but with little effect. The Council of Ministers' Commission on Environmental Protection examined progress in resolving pollution of the lake early in 1985, and found that intensive economic development in the area was outstripping the construction of purification facilities. Gosplan and the Leningrad Soviet executive committee were instructed to step up construction of waste treatment installations.[27]

Once again, the Soviet literary elite took a stand on an important environmental issue. Authors Iurii Bondarev and Piotr Proskurin criticized neglect of Lake Ladoga at the USSR Writers' Congress in 1986. While Bondarev explicitly linked the development of Russian culture to environmental protection, Proskurin claimed Lake Ladoga was on the brink of biological death.[28] In his speech to the Congress, Proskurin also lamented the censorship of literature that could have served as a vehicle for stimulating environmental consciousness. Other writers teamed up with academicians to rebuke officials for their arbitrary and secretive approach to constructing the dike. Water in the Leningrad area, they observed, had become so polluted that nearby beaches at Lisy Nos were closed during summer 1986.[29]

In May 1987 the CPSU Central Committee reviewed the

ecological situation of Lake Ladoga, severely criticizing a number of ministries for failing to take the necessary measures to reduce pollution of the lake. Minister of Timber, Pulp and Paper, and Lumber Busygin was given a reprimand. For decades, it was noted, the Priozersk cellulose plant operated by that ministry spewed unpurified waste water into Lake Ladoga. The plant has been closed, but not before the national economy suffered substantial material losses. (In a move sure to please Siberian ecologists, the Central Committee announced that to compensate for the closure of the Priozersk plant, a 200,000 ton/year cellulose plant will be put into operation at Bratsk in 1990). The State Agricultural Industry Committee of the RSFSR was criticized for poor storage and handling of mineral fertilizers, resulting in letting phosphorous and nitrogen compounds into the water. Measures for purification of municipal wastes around Ladoga were inadequate. The Central Committee reprimanded other officials for their careless attitude toward the major source of potable water for Leningrad and the Karelian ASSR. Scientific institutes and ministries were ordered to conduct further studies of the ecological system of the basin.[10]

Ecological Pluralism under Glasnost'?

A new component of the Soviet environmental debate is an incipient pluralism beyond the bureaucratic or corporatist forms of interest articulation that characterized the Brezhnev period. The more relaxed political situation under Gorbachev has spawned

dozens of small, voluntary environmental groups. Among these are Del'ta, a Leningrad organization headed by Petr Kozhevnikov, a water resources inspector; Spaseniie (Salvation), another Leningrad organization formed to protect historic buildings, headed by Aleksei Kovalev; and Klub 81, another Leningrad ecology-culture group. These three groups are part of a larger umbrella organization based in Leningrad, called Epitsentr. In the summer of 1987 Epitsentr unofficially (and unsuccessfully) sponsored three candidates for Leningrad city soviet elections. Epitsentr began publishing a monthly information and discussion bulletin, Merkurii, edited by Elena Zelinskaia, in May 1987.[31] Del'ta and Klub 81 have been active in the campaign opposing construction of the Gulf of Finland dam.

The Epitsentr groups are generally social-democratic in orientation. They strongly support Gorbachev's reform initiatives, and claim to be working within the limits of his proposals for Soviet society. The ecology groups in Epitsentr hold an environmental perspective comparable to that of the West German Greens. However, they have eschewed the obstructionist tactics and anti-technology world-view of the European Greens. They decisively reject the possibility of offering a political alternative to the Soviet Communist Party.[32] Although these nascent interest groups have not been disbanded by Soviet authorities, as they would have under Brezhnev, they are expected to recognize the limits of glasnost'.

The highly nationalistic and antisemitic Pamiat (Memory) and Otechestvo (Fatherland) are two groups that have a tangential

interest in the environment. Their primary interest seems to be in protecting the historical and cultural legacy of rodina, the Motherland. These groups evolved in the early 1980s from societies for the preservation of historic monuments. Pamiat and Otechestvo are rumored to have high-level support from conservative elements in the Party and state bureaucracy. These two organizations are examples of groups that have flourished under Gorbachev, but are opposed to essential elements of his programs.[33] They represent the forces of extreme Russian nationalism that, if not checked, could disturb the tenuous accommodation that exists among the Soviet Union's many ethnic groups.

The (Siberian) Russian tension evident in the river diversion debate is a more restrained manifestation of this tendency. In turn, certain of the non-Russian nationalities resent what they perceive as Russian insensitivity to the environmental destruction of their republics. Central Asians have complained, for example, that the writers so eager to defend Siberia's natural wealth care little about the low socio-economic development of the Central Asian republics.[34] Citizens of the Baltic republics have been particularly concerned about the location of nuclear energy plants in or near their territory, and resent the rumored presence of nuclear waste dump at Paldiski, near Tallinn, Estonia. Georgian intellectuals are opposed to construction of the Caucasus Mountain Railway, a 188 kilometer, twin-track line running from Ordzhonikidze to Ksani. The rail line, it is argued, will damage Georgian forests, archeological

sites, and historical monuments, and will necessitate a large influx of non-Georgian (that is, mostly Russian) labor into the republic.[35]

The most significant manifestation of ethnic tensions in the recent years, the February-March 1988 dispute over the the Nagorno-Karabakh autonomous region in Azerbaidzhan, was linked to Armenian ecological protests.[36] A group of Armenian intellectuals sent an open letter to Gorbachev in March 1986 complaining about pollution from chemical plants and the radiation leaks from the Medzamor nuclear power station, and demanding immediate action to address the severe health problems affecting the republic's population.[37] Shortly thereafter an Armenian journalist published an article in the central press detailing the ecological horrors visited on Erevan by the chemical industry. The postwar general plan for the city envisioned the relocation of 76 enterprises outside city limits. Not only did the authorities fail to move a single enterprise--they constructed 54 new factories! The situation was exacerbated by Erevan's population growth, from 450,000 in 1947 to 1.2 million today. Chemical smog, the author charges, has resulted in untold birth defects, higher levels of infant mortality and morbidity, and increased sterility.[38] Erevan's air pollution problem, the dropping level of Lake Sevan and its pollution from agricultural runoff, and public discontent over the Medzamor nuclear plant and hydroelectric power stations in the republic precipitated demonstrations late in 1987. In responding to Armenian protests over ecological issues, the Party inadvertently encouraged them to broaden their demands to include

the territorial issue of Nagorno-Karabakh.[39]

Following the Chernobyl' disaster of April 1986, Ukrainians have become increasingly restive about plans to construct additional nuclear power plants in their republic. Many of the republic's most prominent writers (such as Oles' Honchar) and scientists have protested plans to expand nuclear power capacity. In August 1987, seven Ukrainian writers published a letter in Literaturna ukraina urging a halt to construction of a nuclear power plant on the Kremenchug reservoir, in Cherkassy province. Builders have already destroyed valuable pine forest growing next to the Dnepr river. The writers expressed concern about operating a nuclear facility in a heavily populated area--several major cities, including Dnepropetrovsk, Zaporozhe, Dneprodzherzhinsk, and Kremenchug are located in the region. The writers also opposed the plant on cultural grounds--the station is being constructed near Chigirin, the historical capital of the Ukrainian Hetman state and a symbol of Slavic unity. Thus, they in effect argue, patriotic Russians and Belorussians, in addition to Ukrainians, should resist this insult to their common Slavic heritage.[40]

Opposition to nuclear power in the Ukraine, however, has encompassed virtually all segments of the population. Several unofficial groups, including Komsomol youth and cultural figures, have deplored the ecological consequences of Chernobyl', petitioning the authorities to halt construction of the Chigirin plant. Religious believers associate the disaster with apocalyptic events in the Book of Revelations. Doctors in the

Ukraine are said to spend much of their time treating patients for "radiophobia," an acute fear of radioactivity.[41]

The force of united public resistance to nuclear power may have slowed the development of nuclear power in the Ukraine. Construction on the fifth and sixth 1000 MW reactors at Chernobyl' was suspended in May 1987, for example, and completion of the Chigirin project is now in doubt.[42] Prospects for curbing nuclear power in the Ukraine are, in the long run, more problematic. Much of this construction is to supply the energy-poor Eastern European allies with electricity well into the 21st century. Many scientists and officials agree that, compared with the pollution that will result from burning Eastern Europe's brown coal and lignite, nuclear power is environmentally benign. Should the CMEA countries modernize and strengthen their economies to the point that they can easily pay for imported oil (by exporting "hard goods" in return), then expansion of Ukrainian nuclear facilities would be unnecessary. Given the current state of the CMEA member-nations economies, this does not seem likely.[43]

The new environmental activism also appears to have a role in Soviet foreign policy. In his speech to the 27th Communist Party Congress, held in February-March 1986, Gorbachev stressed the importance of international cooperation on problems of a "global scale"--pollution of the environment and the exhaustion of natural resources.[44] The US/USSR Joint Committee on Cooperation in the field of environmental protection in November 1985 resumed its annual high-level meetings, suspended since the invasion of Afghanistan. The Soviets have been active participants in the

Montreal conference on stratospheric ozone depletion, and recently concluded an agreement with the United States for joint research on ozone depletion in the antarctic. A Soviet public commission on environmental protection, chaired by the writer Sergei Zalygin, has been established to develop cooperation with foreign ecological organizations. Significantly, formation of the new commission was announced at a meeting of the Soviet Peace Committee, and the commission itself was named "Greenpeace." The chairman of the international Greenpeace organization, David McTaggart, was invited to the inaugural meeting.[45] These recent events suggest both a substantive and a symbolic role for environmental protection in Soviet foreign policy.

The Changing Context of Environmental Protection

Important changes are occurring in Soviet environmental protection under Gorbachev. While the focus of environmental efforts has not shifted perceptibly (water protection remains the single most important general issue), the process by which these issues are addressed has changed markedly. First, in keeping with the new policy of glasnost', environmental questions are being debated more openly and honestly than at any time since the initial furor over Lake Baikal. Secondly, the participation of non-specialists in these debates, particularly literary figures, has become routine. Moreover, Soviet writers almost invariably adopt environmentalist positions, and they are not reluctant to couch their criticisms of developers in highly emotional terms.

One of the most significant aspects of such emotive appeals is the nationalistic tone that has characterized recent debates. This nationalism is frequently Russian (as in the river diversion debate), but links between ecological concern and ethnic sentiment are evident in other republics as well.

Officially, the highest levels of Party and government seem to be more willing to respond to environmental crises than at any time in the past. Despite considerable disagreement on many of Gorbachev's reform initiatives, the Soviet leadership appears to be in basic accord on the need to reduce costs resulting from environmental degradation. Soviet economists for the past two decades have urged greater reliance on economic mechanisms in order to reduce the excessive waste of natural resources. Moreover, they have convincingly demonstrated the social and economic costs of unrestrained pollution.[46] These arguments have made an impression on the Party leadership under conditions of perestroika. At a January 1988 meeting, the Politburo announced a planned shift from administrative to primarily economic methods in environmental protection over the next few years.[47]

Recent attempts to reorganize the Soviet bureaucratic may also benefit the environment. The Party Central Committee and the USSR Council of Ministers created a State Committee for the Protection of Nature (Goskompriroda) in early 1988. This new agency is supposed to centralize and modernize environmental administration and regulate the use of natural resources, a development advocated for years by Soviet environmentalists.

Goskompriroda is organized as a union-republic committee, with departments corresponding to relevant subdivisions within the State Agro-industrial Committee, the Ministry of Water Economy, the State Committee for Hydrometeorology and the Environment, the Ministries of Fishing and Geology, and other ministries and departments whose actions affect the environment. This new committee is invested with an impressive range of responsibilities and powers, including coordinating ministry activities; preparing and implementing resolutions (a comprehensive law on nature protection is to be drawn up by Goskompriroda and the Ministry of Justice for adoption in 1989[48]); developing economic mechanisms for resource use; regulating hunting and the use of nature preserves; organizing education programs for the public; and planning and implementing international cooperation efforts. Goskompriroda will also have the authority to impose a ban on construction or renovation that might unduly threaten the natural environment.[49]

Although the Party's efforts at enhancing environmental protection are sincere, it is doubtful that the fragmented and contradictory character of environmental protection can be rectified so easily. Unless ministerial prerogatives are thoroughly emasculated by perestroika, and the costs of environmental degradation honestly accounted for, the effects of additional laws and adminstrative reorganization will be marginal. If that is the case, the symbolic aspects of Soviet environmental protection, which so often substituted for serious efforts under Brezhnev, will remain a part of environmental policy under Gorbachev.

NOTES

1. The most recent Western studies of Soviet environmental protection efforts are Charles E. Ziegler, Environmental Policy in the USSR (Amherst: University of Massachusetts Press, 1987); Barbara Jancar, Environmental Management in the Soviet Union and Yugoslavia (Durham, NC: Duke University Press, 1987); and Joan DeBardeleben, The Environment and Marxism-Leninism: The Soviet and East German Experience (Boulder: Westview, 1985).

2. See DeBardeleben, The Environment and Marxism-Leninism.

3. The diversion project is succinctly discussed in Philip P. Micklin, "The Vast Diversion of Soviet Rivers," Environment, Vol. 27, No. 3 (March 1985), pp. 12-20, 40-45. Other plans call for the diversion of water from the Vychegda and Pechora rivers southward to the Kama-Volga-Caspian Sea Basin and through the Volga-Don Canal into the Sea of Azov, and the construction of a canal linking the Danube and Dnepr rivers in southeast Russia.

4. See the article "Povorot: uroki odnoi diskussii," by Sergei Zalygin, in Novyi mir, No. 1 (January 1987), pp. 3-18. In keeping with the new spirit of glasnost, Zalygin gave river diversion proponents the opportunity to present their case in the pages of his journal. Seventeen engineers, geologists, irrigation workers, hydroepidemiological sevice inspectors and scientists, mostly from Volgograd and Uzbekistan, argued for the project in the July 1987 issue of Novyi mir ("Kak sovershaetsiia povorot," Novyi mir, No. 7 (July 1987), pp. 181-235.

5. See the letter by 16 members of the Academy of Sciences' Institute of Water Problems, and the subsequent rebuttal by Zalygin and Petrov, in Izvestiia (20 April 1987), p. 4.

6. Pravda (20 August 1986), p. 1.

7. See Bess Brown, "What Will Cancellation of the Siberian River Diversion Project Mean to Central Asia," Radio Liberty Research (RL 334/86), 26 August 1986, for a discussion of the issues involved.

8. See, for example, the article in Pravda ((8 September 1980), p. 7.

9. Boris Komarov (pseud.), The Destruction of Nature in the Soviet Union (White Plains: M.E. Sharpe, 1980), pp. 14-16.

10. Ekonomika i organizatsiia promyshlennogo ptitsevodstva, No. 3 (March 1982), trans. in Current Digest of the Soviet Press, Vol. 34, No. 23 (7 July 1982), p. 3.

11. Craig ZumBrunnen, "Gorbachev, Economics and the Environment,"

in Gorbachev's Economic Plans, Vol. 2, Study Papers submitted to the Joint Economic Committee (Washington, D.C.: US GPO, 23 November 1987), p. 403.

12. G. Galazii, "Protection of the Lake Baikal Ecosystem," in Man and Biosphere (Moscow: Nauka, 1984).

13. Kh. Kh. Trass, "Ekologicheskie myshlenie i Baikal," Priroda, No. 10 ((1984), pp. 43-49.

14. Izvestiia (5 July 1985), p. 2.

15. Izvestiia (3 November 1985), p. 3.

16. Pravda (28 December 1986), p. 2.

17. Izvestiia (26 November 1987), p. 6.

18. Philip Taubman, "Lake of Lakes: Keeping it Sparkling," New York Times (22 September 1987), p. 4.

19. Pravda (22 June 1987), p. 4.

20. Izvestiia (26 November 1987), p. 6.

21. Pravda (10 February 1986), p. 2.

22. Theodore Shabad, "Aqueduct Completed to Feed Caspian Water into Dried-Up Kara-Bogaz-Gol," Soviet Geography, Vol. 26, No. 1 (January 1985), pp. 59-61.

23. See the interview with B. Paton, President of the Ukrainian Academy of Sciences, in Literaturnaia gazeta, No. 44 (29 October 1986), pp. 1, 10. A similar criticism was voiced about the Baikal pipeline (see note 17), and this attitude was apparent in a series of interviews conducted by the author in Moscow, May 1987.

24. Pravda (10 February 1986), p. 2.

25. Bess Brown, "Kara-Bogaz: Still No Solution for the Environmental Disaster," Radio Liberty Research (RL 48/88), 3 February 1988.

26. Ibid.

27. Izvestiia (12 January 1985), p. 3.

28. These speeches to the writers' congress are printed in Literaturnaia gazeta, No. 27 (2 July 1986), p. 10.

29. Izvestiia (11 January 1987), p. 3.

30. Sovetskaia rossiia (29 May 1987), p. 1.

31. "Merkurii: Periodicheskoe izdanie Soveta predstavitelei ("Epitsentr") sotsial'no-kulturnogo dvizheniia," Posev, No. 7 (July 1987), pp. 30-40.

32. Bill Keller, "Storm of Protest Rages over Dam Near Leningrad," New York Times (27 September 1987), p. 16.

33. An excellent summary of these two groups may be found in Julia Wishnevsky's article, "The emergence of 'Pamiat' and 'Otechestvo,'" Radio Liberty Research (RL 342/87), 26 August 1987. An appendix of members is included.

34. Ann Sheehy, "The Central Asian Siberian River Diversion Lobby Hits Back," Radio Liberty Research (RL 243/87), 29 June 1987.

35. Elizabeth Fuller, "Georgian Intellectuals Oppose Mountain Railway Construction Project," Radio Liberty Research (RL 368/87), 25 August 1987.

36. Felicity Barringer with Bill Keller, "A Test of Change Explodes in Soviet," New York Times (11 March 1988), p. 4.

37. Elizabeth Fuller, "Armenian Authorities Appear to Yield to Ecological Lobby," Radio Liberty Research (RL 130/87), 30 March 1987.

38. Zorii Balaian, "Erevan v Bede: gorod zhdet konsiliuma," Literaturnaia gazeta, No, 26 (24 June 1987), p. 13.

39. Elizabeth Fuller, "More Demonstrations in Armenia," Radio Liberty Research (RL 79/88), 22 February 1988.

40. David R. Marples, "Ukrainians Denounce New Nuclear Plant," Soviet Analyst, Vol. 16, No. 19 (30 September 1987), pp. 5-7.

41. Bohdan Nahaylo, "Mounting Opposition in the Ukraine to Nuclear Energy Program," Radio Liberty Research (RL Supplement 1/88), 16 February 1988.

42. Paul Quinn-Judge, "Soviets Feel Nuclear Heat: Work Halted on Ukrainian Nuclear-Power Station," Christian Science Monitor (4 February 1988), pp. 1, 9.

43. For a discussion of the energy-environment in CMEA, see Charles E. Ziegler, "Environmental Protection in Soviet-East European Relations," forthcoming in Joan DeBardeleben, ed., Environmental Problems and Policies in Europe.

44. "Gorbachev CPSU Central Committee Report," Foreign Broadcast Information Service: Soviet Union (26 February 1986), p. 08

45. Pravda (5 June 1987), p. 3.

46. Pravda (8 January 1988), p. 1.

47. See Joan DeBardeleben, The Environment and Marxism-Leninism, pp. 149-265; and Charles E. Ziegler, Policy Alternatives in Soviet Environmental Protection, Carl Beck Papers in Russian and East European Studies, University of Pittsburgh, No. 102.

48. Barry Holland, "Goskompriroda: Saving the Environment," Soviet Analyst, Vol. 17, No. 4 (24 February 1988), p. 3.

49. Pravda (17 January 1988), pp. 1-2.

APPENDIX G

Helsinki Commission Hearing: The Politics of Pollution in the Soviet Union and Eastern Europe - Two Years After Chernobyl April 26, 1988

PREPARED STATEMENT OF BARBARA JANCAR, PROFESSOR OF POLITICAL SCIENCE, STATE UNIVERSITY OF NEW YORK AT BROCKPORT

Mr. Chairman, distinguished members of the Commission:

You have asked me to take up two related matters: [1] to give a general overview of the more important unofficial environmental groups in Eastern Europe and their attempts to coordinate policies; and [2] to assess the impact on policy formulation these group might have as well as their ability to generate support at all levels. If I had been asked to talk about these groups three years ago, or even two years ago, the matter would have been relatively simple and straightforward. Today, these groups are playing a focal role in urging the East European (and Soviet) regimes towards political reform. To set this amazing development in context, I would like to make four initial assumptions.

(1) In every East European country, the environmental legacy of communist rule has been disastrous. Environmental degradation has reached such proportions that it can no longer be hid from the public. Nowhere has the catastrophe been more obvious than in Poland and Czechoslovakia. Poland's rivers are among the most polluted in the world. Air pollution in and around the great mining areas near Kracow was termed by one Polish ecologist the worst in the world with the possible exception of that in the Donetsk Basin in the Soviet Union. During the brief period of Solidarity, reports circulated that typhhus had become again a major public health problem in Warsaw. In Czechoslovakia, thirty percent of the forests in the Czech lands (Bohemia) are dead, and 20 percent more are dying. On both sides of the East German-Czech border, the bare trunks of trees march up naked hillsides devoid of undergrowth as if the victim of some enemy bombing attack. In Slovakia, half the rivers can no longer support life. The situation is not much better in the other East European countries. The GDR is Europe's worst polluter of the atmosphere, emitting some 5,000,000 tons of sulful dioxide into the air in 1982, about 150 percent more than does neighboring Czechoslovakia. Thirty percent of the Hungarian forests are also in the process of dying or already dead. Two-thirds of Hungarian drinking water reserves are endantered, and the country is further exposed to transboundary pollution of its waters which come from Romania. Romania is the fifth worst polluter of air in Europe, but because of its deciduous forest, only about 2 percent of its forests have been affected by acid deposition. As regards water pollution, only 20 percent of Romania's rivers are considered capable of providing potable water. One project which has aroused particular concern among Western environmentalists is Ceasescu's plan to turn the Danube Delta into a giant agrocomplex by 1990, thereby destroying an irreplacable wildlife habitat and migrating bird flyway. Even Bulgaria, which has prided itself on its environmental policies, has recently admitted shortcomings in its handling of air and water pollution.

(2) Chernobyl was the physical catalyst for the virtual legitimization of the activities of unofficial environmental groups. Groups had been in existence before that time, and had even had an impact upon public policy, but after Chernobyl', they proliferated. RFE estimates that are over 2,000 organizations active in envrionmental protection in Poland, most of which were established after Chernobyl'. While there appear to be fewer organized groupings in Hungary, the country claims

the largest independent environmental movement in Eastern Europe, spawned by the controversy over the building of the Gabcikovo-Nagymaros hydroelectric dam on the Danube. In the Soviet Union, scientists and intellectuals joined together after Chernobyl' in a popularly supported anti-nuclear movement, while grass-roots ecology clubs sprang up in every major city. In its attempts to bring the new environmental activism under its control, the leadership agreed to a loose federation of these clubs.

(3) The political impetus for the extraordinary growth of East European environmental activism was Gorbachev's policies of glasnost and democratization. The policy in fact corresponded to the reality of the loss of Soviet control over the economic, cultural and intellectual life of the East European countries. This process had been in progress since the breakdown of the Stalinist system, especially in Poland and Hungary, but it had been suppressed by the domestic regimes. Glasnost stripped away the ideological and political underpinings for suppression. At present, the process must be considered irreversible, opening new doors to public participation in Eastern Europe. The diversity of national economic and cultural history in the area has meant different degrees of acceptance of perestroika by the East European governments. Some countries, notably Poland and Hungary, have opened the doors rather wide, while others, particularly Romania and Czechoslovia, have tried to keep them shut.

(4) As in all countries where environmental movements have taken off, there is a hidden agenda to the environmental issues raised. Again cultural and political conditions have shaped the form of this agenda: in Eastern Europe, without exception, the agenda urges political reform along the lines of the West European countries and the re-integration of Eastern Europe with the West. In the Soviet Union, the hidden agenda appears to reflect a widespread concern on the part of many of the national groups over loss of national identity. Environmentalism has thus served to exacerbate rather than mitigate latent national tensions.

The Environmental Groups

It would be impossible to name all the unofficial groups operating in Eastern Europe. A few words about the situation in each country will suffice. In East Germany the environmental movement began under the aegis of the Evangelical Church. The emergence of ecology groups was an offshoot of the East German peace movement, the largest grass-roots movement of its kind in Eastern Europe. The government appeared to tolerate the arrangement until last year when Gorbachev's policies of glasnost raised expectations among grass-roots environmentalists and peace activists alike and caused conflict within the Evangelical Church leadership. In May of 1987, alongside the Church's congress in East Berlin, the unofficial groups staged their own "Congress from Below" in protest over what they interpreted as a too conformist attitude of the Church. In November of 1987., the police staged its widest crackdown on unofficial activities in recent years when it raided the environmental library of the Zion Church in East Berlin. Founded in 1986, the library had become a meeting place for independent peace and environmental groups, and contained a wide range of books not otherwise available in the GDR. In addition, the library printed the leading samizdat environmental journal, Unweltblaetter [Environmental Pages].

Until the rise of Solidarity in 1980, there was virtually no discussion of the environment in Poland. The Polish Ecology Club in Kracow was the first group to be organized in September 1980, following the Gdansk strikes. The Club began publishing a popular monthly and soon claimed a membership of over 1000 people. Under its sponsorship, the Polish people learned for the first time of the seriousness of pollution in their country. The Club claims to have been the moving force behind the drive in Crakow to close the polluting alluminum plant in 1980-81, as its experts prepared the memorandum demanding the closure of all processes emitting fluoring and hydrogen fluoride. The Club went underground with the imposition of martial law in December 1981, and resurfaced after Chernobyl'. One of its leaders, Zygmunt Flora, attended the Wilson Conference on Environmental Pollution in Eastern Europe held in Washington DC in June 1987. The Club is also the first East European environmental group to become a member of Friends of the Earth with representation on the international board.

News of Chernobyl' and the authorities' selective coverage of its impact in Poland aroused the public's fears of impending ecological disaster. In Bialystok, Wroclaw and Cracow, workers by the thousands signed protests against nuclear power. In May, 1986, an independent Ecological Committee was founded in Lublin whose aim was to provide information on a regular basis about environmental threats to the area. That same month, two health and science committees linked to Solidarity formed a working group for the protection of the environment and started publishing its journal, Zagrozenie [Pollution]. In an open letter, the Polish Ecologty Club appealed to the Polish legislature to place atomic energy under public control, and requested that the construction of all new plants be subjected to national referendum. As in the GDR, the church decided to lend its prestige and power to the environmental cause with the sponsorship in 1986 of the Saint Francis of Assisi Ecological Movement. In January 1987, ecological groups and students demonstrated in Wroclaw against the discharge of heating oil into a tributary of the oder River by a factory across the Polish border in Czechoslovakia. Many of the groups have attributed Chernobyl' directly to the Soviet political system. And it is common belief that the disastrous environmental situation in Poland is the result of the regime's refusal to listen to public opinion.

Of greatest significance to the possible future integration of the Polish environmental movement was the participation of the groups in the conference, titled "International Peace and the Helsinki Agreements", which took place in Warsaw in May 1987. The conference was the first unofficial meeting of its kind ever to be held in Eastern Europe and was organized by a group of young peace activists who called themselves Wolnosc i Pokoj [Freedom and Peace] or WiP. The meeting united 250 primarily young people from East and West for discussions on the connections between the Helsinki Agreements, peace and human rights, nonviolent struggle in East and West and post-Chernobyl' environmental issues. According to participants, about 65 representatives came from Western countries, including 10 Americans. There were 100 WiP activists as well as representatives from Solidarity and other Polish unofficial groups. Most important, Charter 77 sent representatives, and there was one participant from a peace group in Slovenia, Yugoslavia. Permission was refused to activists from the USSR, Hungary and East Germany to attend the meeting. The conference was structured around a memorandum entitled, "Giving Real Life to the Helsinki Accords." The original version of the memorandum had been drafted in 1985 by a West European coalition called the European Network for East-West Dialogue in

response to the "Prague Appeal" issued in March 1985 by Charter 77. The final draft of the memorandum was the product of a year's discussion between East and West and was signed by more than 5000 persons from 20 countries. The memorandum emphasized the indivisibility of peace and human rights, and outlined ways to achieve Charter 77's objective of "a democratic peace."

As in Poland, the Hungarian environmental movement antidates Chernobyl'. In 1977, Czechoslovakia and Hungary signed an agreement to build a giant hydroelectric dam on the Danube. A group calling itself the Association for the Protection of the Danube Region requested permission to come into being but was unable to obtain the proper permit from the Hungarian government. In 1983, biologist Janos Vargha founded the first unofficial environmental group, the Danube Circle. The group believed that it could focus exclusively on environmental activities but almost immediately ran into politics. In 1984, a second group emerged calling itself the Blues. The Blues drew international attention in 1985, when its members sent a letter protesting the dam's construction to the Hungarian National Assembly and Council of Ministers. Fifty leading cultural and scientific figures agreed to sign it. The letter was then circulated among the general public. Reportedly, 10,000 signatures were secured, but only 6,000 accompanied the letter because the rest had been seized by the police.

In 1986, the Danube Circle was awarded the alternative Nobel Prize. Thoroughly embarrassed, the Hungarian government permitted only Vargha to accept the prize. The Danube Circle insisted it did not seek confrontation and invited the Hungarian Academy of Sciences supervise the use of the prize money. The invitation was rejected by the leadership. By this time, sufficient public awareness of the dam issue had been generated so that some 2500 signatures were secured for a petition demanding a referendum on the subject. This request was also rejected by the government.

Perhaps the most significant success of the Hungarian environmental movement was been its forging of international contacts. The Danube Circle has established good links with Czechoslovakia's Charter 77, which has condemned the Nagymaros Dam. In March 1988, a group of scientists from the Czechoslovak Academy of Scientists added their voice to the opposition over the dam, confirming the Hungarian and Austrian environmentalists' objections to it. In 1985, the West German Greens led an unoffical parliamentary delegation to Hungary to protest the dam. During 1986, an extraordinary degree of cooperation developed between the Hungarian groups and the Austrian Greens. A joint meeting of the Blues and the Greens resulted in the "Danube Walk" in Budapest on 8 February 1986 which was met with considerable police harshness. When, in May, the Austrian and Hungarian governments proceeded to finalize an agreement providing Austrian credits for the construction of the dam, the two groups joined forces to prevent the agreement from being ratified. In an unheard of action for any independent group in Eastern Europe, 30 Hungarian intellectuals put a notice in the Austrian Die Presse, formally petitioning the Austrian parliament to review the terms of the agreement.

As the Danube opposition grew more vocal and more numerous, other local groups emerged. In addition to the dam, public sentiment has run high on Hungary's agreement to take toxic wastes from neighboring Austria. In communities where the waste has been scheduled to be delivered grass-roots organizations have spring up,

bringing pressure to bear on local government to reject the deliveries. By the end of 1985, the government had to contend with a plethora of groups all working independently of one another, whose programs and tactics were not coordinated. Two dissident journals began reporting on environmental issues, one entitled Vizjel [Watermark] devoted exclusively to environmental protection.

There have been several tantalizing developments in environmental activism in Czechoslovakia, whose people have long been faulted by their own scientists for lack of concern for the environment. The first is the ongoing involvement of Charter 77 in environmental issues. Among its more than 300 statements on human rights, the environment has figured prominently in many of them. After Chernobyl' the Charter responded to the authorities' handling of information about the accident with a letter to the Czechoslovak Government and National Assembly, demanding full publication of the facts. In its tenth anniversary statement, the Charter signers took on the role of national environmental conscience, calling on Czechs and Slovaks to bring discussion on the environment out into the public forum as an indication of their responsibility toward future generations. In April 1987, the Charter came out with its second full-length document on the environment, urging restructuring of the economy and the elevation of environmental protection to the government's first priority.

The second is the emerging activism of the official environmental organizations, the Czech and Slovak Societies for the Defenders of Nature. In February of this year, the President and members of the Adirondack Mountain Club from upstate New York held a meeting with the President and Secretary General of the Czech Society of the Defenders of Nature. It is believed that this meeting was the first such encounter between a US environmental group and an official organization in Czechoslovakia. Prior to that time, the author had herself met with representatives of the Society and had also given interviews on environmental issues of interest to the CSSR and the USA. The first interview was published in the Society's monthly, Nasi prirodou; the second in the influential Party weekly, Tvorba. The three incidents illustrate the desire of the environmentalists for international contacts and suggest support in high places for their efforts.

Of special significance in developments in Czech domestic environmental politics has been a grass-roots protest from Northern Bohemia against environmental pollution in that area. The first of its kind in Czechoslovakia, it has had to be taken seriously as environmental conditions in that area have reached the "ecological barrier," or point of no return. In January and February of 1987, some 300 people from the Chomutov District (one of the ten districts in North Bohemian kraj), signed a letter sent first to the Chairman of the district local government, and then to the Czech Prime Minister and Praesidium of the Communist Party. It is not clear whether the letter only complained about an insufficient warning system to alert people to increase in air pollution, or was a general complaint about air pollution in the district. The matter was taken up at the regional Party conference in October. The Party regional committee secretary referred to the petition and admitted that its criticism of the warning system was justified. He then called attention to the public health problem posed by the pollution, the public's lack of faith in the Party to do anything to remedy it, and the breakdown in the international credibility of Czechoslovakia to do anything to reduce sulfur emissions.

An entirely different official reaction was given to the report released in June 1987 by a group of 100 experts associated with the official Slovak Society of the Defenders of Nature and the Countryside on pollution in the Slovak capital of Bratislava. Entitled Bratislava nahlas (Bratislava glasnost), the 73-page report systematically examines the ecological degradation in the city and the social and economic consequences that it has brought in its wake. Noting that Bratislava has the highest suicide rate in the country, the study faulted the decline in the city's quality of life. The report sharply criticized Bratislava's record in urban development planning and its neglect of cultural monuments, and opposed the proposed construction of a nuclear power plant. The response of the local authorities was to liken the report's call for a re-evaluation of Bratislava's situation to proposals for reform that were made in 1968 by "self-appointed informal groups", obliquely accusing the authors of using an environmental issue to promote its own antistate agenda. Official reaction to the Bratislava report confirms that glasnost in Czechoslovakia has yet to exempt environmental activism from the charge of deviant behavior.

In Bulgaria and Romania, environmental activism remains the province of the experts and intellectuals. The present political situation in Romania augurs poorly for the emergence of a more active environmental elite. In Bulgaria, by contrast, the government has apprently reacted favorably to scientific critical evaluations of the management of the country's air and water pollution control programs.

Its loosely associational federal constitution and self-management philosophy have made Yugoslavia a case unto itself. To a large extent, environmental issues have remained local. Self-management means that all parties to a project must agree to it before it can be implemented. The practice has given environmentalists a limited voice in decisions regarding national parks, and there have been isolated cases of public protest over the location of polluting industries, the most notable of which was the controversy over the building of a nuclear power plant on Vir Island in the Adriatic. One of the most remarkable successes on a federal level has been the cancellation of the building of a hydroelectric station on the Tara River that would have flooded one of the most beautiful [illegible] river gorges in Europe. But there has been less movement in cleaning up the pollution which threatens all of the country's major waterways, and the Adriatic. The Tara itself risks being severely polluted by discharges from a lead smelter above the famous canyon, while inter-republican controversy over pollution of the Sava River on the border between the Republics of Croatia and Serbia continues unsolved.

The news of Chernobyl' broke at a most opportune moment in Yugoslavia, when popular attention was focused on a nation-wide discussion about the construction of four new nuclear power plants. Early in April 1986, during elections to the Federal Parliament, high school members of the Communist Youth League in Serbia had drawn up a petition calling for the end of nuclear energy in the country. The young people collected some 120,000 signatures, although the youth initiative was denied access to the mass media. At that time, public protest had little effect and the new government proceeded with construction plans. On May 10, 1986, hundreds of young people again under the sponsorship of the Communist Youth League demonstrated in Ljubljana, Slovenia, against the risks of planetary pollution and the construction of nuclear power plants in Yugoslavia. In Serbia, Belgrade intellectuals formed a Committee for the Protection of Man and the Environment to

address nuclear as well as other environmental issues. Popular concern about nuclear power became so widespread in Slovenia, that the authorities organized public hearings and information seminars. Developments in the environmental field in Yugoslavia are exemplary of the type of interpenetration that goes on between grass-roots initiatives and official organizations.

While the Soviet Union cannot be considered East European, the emergence of grass-roots environmental groups in the Union Republics as well as in the major cities is worth noting. As in East Europe, membership in these groups is recruited primarily among young people or among young intellectuals between the ages of 25-35. Two studies of unofficial groups in the Soviet Union published recently in Soviet journals suggest that the young people are most concerned about issues of peace and a nuclear-free environment, while the intellectuals have concentrated on those environmental issues which have the most direct impact on the development of their particular national area.

The groups tend to be small and to act independently of one another. However, the four largest of the 300-odd groups in Leningrad: Salvation, Peace, Ecology of Culture and the Cultural Democratic Movement, are now united in a coordinating organization called the Council of Ecology and Culture. The Council attempted to put up candidates for the election to the local Leningrad soviets in June 1987, but their attempt to register the candidates was frustrated because the organization is not officially registered. That same month, the Soviet authorities took steps to coopt these groups by forming a new public commission under the Soviet Peace Committee called Greenpeace. Among the proposals for the new commission was to channel money coming from citizens into the Soviet Peace Fund into environmental purposes.

As I have indicated in my book, the Soviet Union now has an identifiable and numerous environmental lobby, but it would be a mistake to see this lobby as unified or united on issues. Environmental convictions frequently have become the support of nationalist emotions. Village writer Valentin Rasputin has been among the foremost intellectuals fighting for the end of the Siberian River project and the preservation of Lake Baikal. However, in a recent interview with Literaturnaya gazeta (January 1, 1988), he made no secret of his association of environmental values with the preservation of Russian culture and history. The nationalist organization Pamyat [Memory] is another case in point. In response to what might be called the Great Russian preservationist lobby, there has arisen in virtually every union republic a corresponding environmental lobby. The most notable of these are the Georgian, Armenian, Estonian, Azerbajani and Ukrainian groups. In July 1987, 350 Armenian intellectuals issued a samizdat report accusing the Soviet authorities of "biological genicide." And in September and October 1987, thousands of people twice took to the streets in Erevan to demonstrate against environmental pollution in Armenia. Intellectuals, experts and grass-roots organizations have been actively been trying to prevent the construction in Georgia of the Caucasian Mountain Railway through some of the most impressive scenery in the republic. Just recently, the Georgian authorities agreed to halt the project temporarily pending further review. In Estonia, scientists went international to prevent the development of a giant phosphorite lode, which they claimed posed an environmental threat to 25 percent of the Republic's land area. In the Ukraine, intellectuals and scientists have joined their voices with the public's to protest further

construction of nuclear power plants, while in Azerbajan, intellectuals have begun to warn against air pollution and pollution of the Caspian Sea. In all cases, environmental activism has been linked with protests of national discrimination and failure to preserve national historical and cultural monuments. It perhaps was no coincidence that the day after the second demonstration against environmental pollution in Armenia, a group demonstrated in Erevan to demand the return of Karabagh.

Impact on Policy Formation

How can we assess the impact of these diverse and more often than not, local environmental groups on policy formation in Eastern Europe. I would like to close this presentation by suggesting three ways.

The first relates to the seriousness of environmental problems in the area. Decisions in favor of the environmentalist' positions tend to be taken when the regime has certain evidence of the danger of health risks. Three examples are the closing of the aluminim plant in Cracow in 1980/81, the positive reception given the letter signed by 300 individuals in North Bohemia, and the halting of work on nuclear power plants in the Soviet Union, notably in the Ukraine, near Minsk and Odessa. While it is not sure that the authorities would, for example, have halted construction on the Ukrainian AES without pressure from Ukrainian intellectuals and scientists, the experience of Chernobyl' undoubtedly had given them cause for hesitation. In the case of the plant in Poland, some would dispute the role the Polish Ecology Club played in its closing. Conditions in Cracow had reached such a point that something had to be done. On the other hand, the Siberian river diversion does not present such a clear and certain risk, and its proponents may yet regroup and get their way. Similarly, there are no health risks attached to the Gabcikovo-Nagymoros Dam. The need for energy is indisputable, while the risk to habitat and water supply sources is more a matter of conjecture than certainty. In both the Siberian river diversion project and the dam huge vested interests are at stake, making the environmentalists' road an uphill climb. In this connection, it should be stressed that the ecology activists appear mainly to be scientists and intellectuals. Their principal contribution is that they focus public attention on leading pollution or conservation issues. By mobilizing popular discontent, they keep these issues on the environmental agenda, whether the authorities would like to have them there or not. Without the Polish, Yugoslav, or various national nuclear lobbies in the Soviet Union, it is highly possible that the governments would not have given such a careful review of their programs, nor had to provide a public explanation as to why the program was still environmentally feasible, i.e., "safe."

The second two relate to the environmental groups' hidden agenda. This agenda may be a consciously articulated one, or simply the product of the authorities reaction to environmental activism. The Danube Circle is a case in point. The attempt to register the Association for the Protection of the Danube foundered on bureaucratic red tape. Its successor, the unofficial Danube Circle claimed that its goals were apolitical. Indeed, at its inception, it made every effort to disassociate itself from "dissident" groups with political demands. But the authorities persisted in seeing dissidence in its activities and those of the other groups founded in its wake. The numbers of those opposed to the dam construction now span three countries and represent political opposition to formal decisions

taken by three national governments. In democratic countries, political opposition is the norm and expected. In Soviet-style one-party states, the border between political opposition and antistate activity is very ill defined. Environmental politics is not an interest-neutral activity. In every country, it comes up against vested economic and regional lobbies. Does Gorbachev's glasnost include the open public airing of environmental issues? The police action against the "Danube Walk" in Hungary and the official reaction to Bratislava Aloud suggest that so far, it does not.

This point leads to the last impact of the emergence of environmental groups: the role they play in political reform. In clamping down on environmental activism, the authorities in every country strengthen the voices of those who favor radical reform of the system. Newly formed Polish ecology groups accuse the bureaucratic system for having been the cause of Chernobyl'. Concerned scientists in Czechoslovakia state that there will be no environmental protection without democratization. Yet if there is agreement on the need for reform, there is little agreement in any country on what the nature of these reforms should be. Charter 77 signatories, for example, may be united in their warnings about the environment in their country, but disunited on their acceptance or rejection of the 1948 Communist coup. A main point of division is whether the Communist system per se or the malfunctioning of the Communist system is the cause of the ecological disaster. Another is the choice of appropriate strategy to combat existing political conditions. To join in the formation of what Vaclav Havel has called the alternative society, to engage in modes of political opposition traditional to Western Europe, or to attempt to join forces with western environmental groups and work across frontiers? In the Soviet Union, environmentalism has become the ally of nationalism. The Armenian accusation of "biological genocide" directly faults the Russian-imposed Soviet order for environmental conditions in Armenia. Valentin Rasputin is exemplary of the Russian reaction to the ferment taking place in the Union Republics in his focus on Russian values, Russian culture and Russian natural monuments.

The incorporation of diverse hidden agendas serves to keep the environmental groups apart, each engaging in its own circumscribed sphere of activities. Since environmental concerns tend to be local, the lack of agreement on how to wage the ecological battle reinforces this quality of separateness. The regimes are aware of the danger of integration and increased cooperation among groups and across international borders. The Polish government has attempted to unite the environmental groups under a new umbrella organization without success. The Soviet government has done the same. But the groups tend to reject these overtures. In some cases, like in Leningrad, they have formed their own umbrella institutions. In others, they have made their own international contacts, and held their own meetings, citing the Helsinki Agreements as legal justification. The churches' backing off from overt support of such meetings indicates the confusion felt in official circles over the precise relationship between peace activism, environmentalism, the Helsinki Agreements and their own tenure in power.

In conclusion, the urgency of the environmental crisis in Eastern Europe has apparently presented a wide variety of opportunities for environmental activism and generated a diversity of unofficial environmental groups. These groups may be said to have a positive impact on environmental management policy in areas where there is

official recognition of a crisis, and the environmental groups in effect support a top leadership position that may run counter to the interests of a recalcitrant bureaucracy. The groups also have a positive impact on the broadening of the scope of effective public participation in decision-making in these countries. The groups have a negative impact as far as their ability to influence environmental decisions is concerned, when they are perceived as acting in conjunction with "antistate" peace and civil rights activists, calling for the end of the division to Europe or urging the overhaul of the system, whether this be, as in the Soviet Union, to the advantage of the non-Russian nationalities, or in Eastern Europe, the end of the Soviet-imposed regime. One thing is certain. The groups have now moved out the shadows into the mainstream of the grass-roots movements. In their quasi-legitimate status, they appear to have become permanent components of the post-Chernobyl', Gorbachev political scene in Eastern Europe.